What Is Accessibility?

What Does It Mean for State and District Leaders?

Accessibility is a critical key to leverage the power of technology and provide equal educational opportunity for all students, particularly those with disabilities. This concept involves the design of materials (e.g., curricula and resources), devices (e.g., smart phones and tablets), digital tools (e.g., computers, apps, and games), and platforms (e.g., online learning and websites) that support access to educational content and activities. Further, accessibility refers to accommodating individual cognitive and physical needs to remove unnecessary obstacles so that students can demonstrate their knowledge and skills in formative and summative assessments.

This concept of accessibility of digital and web content applies not only to students with disabilities, but also to English language learners and those from underresourced communities. Technological tools can make accessibility possible with embedded supports such as audio and digital text formats of instructional materials and strategies that differentiate and personalize instruction to meet the needs of the learner. These embedded supports must consider the range of variation among learners in their ability to navigate, perceive, understand, and interact with educational content, activities, and services. Further, accessibility features need to be designed with recognition of the wide range of student disabilities that may have an impact on learning, including physical, visual, auditory, cognitive, and neurological disabilities.

Terry Locke, Director of Community Relations, Chandler (AZ.) Unified School District

"While most educators and staff innately desire to serve and communicate effectively with our public, they would be horrified to learn they have discriminated against the disabled and may not recognize that a problem exists or how to address it. Our goal is to reach everyone responsible for our online and electronic communication, in the most straight-forward and understandable way, explaining how to include those with vision or hearing impairment, cognitive or physical disabilities and why it matters."

There is a growing awareness the supports necessary to ensure accessible learning can be built into the hardware and software at the inception of the development process. This approach is referred to as "born accessible" or universal design for learning (UDL). Based on the architectural concept of universal or inclusive design, UDL has gained prominence in the education community because it seeks to level the playing field for all students with three key principles to enhance teaching and learning that provide multiple means of

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1. **Representation so that students can approach information in more than one way.** This includes digital books, specialized websites, hardware, software, and screen readers that may feature text-to-speech, availability of different reading levels, changeable color contrast, alterable text size, or a combination.

2. **Expression so that all students can demonstrate and express what they know.** This includes options in how students express their learning, when appropriate, such as writing, videos, speech-to-text programs, and online concept mapping.

3. **Engagement to stimulate interest in and motivation for learning.** This includes offering students the option across different learning activities or content for a particular competency or skill and providing opportunities for greater collaboration or scaffolding.

Digital learning tools coupled with UDL principles provide opportunities for customization and personalize learning for all students because they allow for more flexibility than traditional learning formats. A tailored learning experience creates more student engagement and achievement.[1] With the continued emergence of innovative technologies, it is now easier than ever for content creators and program developers to reflect these UDL principles. For example, user-friendly tools are available to develop or enhance content so that it is accessible to the broadest range of users:

- Captions for videos
- Alt-text (that is, an inserted word or phrase to describe an image) on websites and in e-books
- Standard headers in websites, forms, e-books, and documents
- Adjustment of text colors and background contrasts
- Text-to-speech, speech-to-text, dictionaries, and glossaries

Although many aspects of digital content can be made accessible with readily available tools, challenges remain, particularly for students with disabilities. This is particularly the case with educational materials that that include

- STEM content—formulas, charts, and graphs can be difficult for screen readers
- Images—adding the right kind of description takes knowledge, practice, and a deep understanding of the content

As more educational content, activities, and services are made available in digital formats and delivered online, the issues of accessibility will continue to be in the forefront for educators as they seek to close the digital divide and ensure educational equity for all students.

[1] Office of Educational Technology, U.S. Department of Education. (2016). *Future ready learning: Reimagining the role of technology in education.* Washington, DC: U.S. Department of Education. Retrieved from: http://tech.ed.gov/files/2015/12/NETP16.pdf

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What About Accessibility in Online Learning Environments?

As technology changes the ways in which students engage with educational materials and the settings in which they learn, our understanding of what represents a free appropriate public education (FAPE) in the least restrictive environment (LRE) also will shift. LRE in a physical classroom or space may look very different from LRE in a virtual or blended learning environment, with various accessibility needs. An online learning environment could be inclusive as a result of a wide variety of accessible content and built-in supports or exclusive (and denying a student FAPE in the LRE) because key learning resources have not been made fully accessible. Although the perception is growing that the use of technology to support instruction can improve student experiences and learning outcomes, digital or online content alone is not sufficient to meet the accessibility needs of all students with disabilities, and many digital learning resources may in fact be difficult or impossible for students with disabilities to access (e.g., videos, animations, documents) without adding accessibility features. It is critical that accessibility and the needs of students with disabilities be factored into planning and development of online learning environments.

Learn more at the Center on Online Learning for Students with Disabilities: http://centerononlinelearning.org/

Additional resources

Born Accessible Learning Resources
http://www.ctdinstitute.org/sites/default/files/file_attachments/Born_Accessible_QuickGuide_508_0.pdf

CAST: *Professional Learning*
http://www.cast.org/our-work/professional-learning#.V6iMGfkrKUk

CAST: *UDL at a Glance* (video)
https://youtu.be/bDvKnY0g6e4

Evolution of Disability Legislation 1973–2016 (infographic)
http://www.ctdinstitute.org/library/2016-08-19/evolution-federal-disability-legislation-1973-2016

Future Ready Assistive Technology: Fostering State Supports for Students With Disabilities
http://www.ctdinstitute.org/library/2016-01-14/future-ready-assistive-technology-fostering-state-supports-students-disabilities

Future Ready Learning: Reimagining the Role of Technology in Education
http://tech.ed.gov/files/2015/12/NETP16.pdf

UDL and Born Accessible Learning Resources: What State Leaders Need to Know (webinar)
http://www.ctdinstitute.org/library/2016-03-30/udl-and-born-accessible-learning-resources-what-state-leaders-need-know

Students with Disabilities Learning Online: Vulnerable Students in a Rapidly Evolving and Unstable Environment
http://ctdinstitute.org/library/2015-04-27/students-disabilities-learning-online-vulnerable-students-rapidly-evolving%0B-and

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UDL and Born Accessible Learning Resources: What State Leaders Need to Know
http://www.ctdinstitute.org/library/2016-03-30/udl-and-born-accessible-learning-resources-what-state-leaders-need-know

Understanding Accessibility: Policy and Implications for State Leaders (webinar)
http://www.ctdinstitute.org/library/2016-08-18/understanding-accessibility-policy-and-implications-state-leaders

Understanding Assistive Technology: Policy and Implications for State Leaders (webinar)
http://www.ctdinstitute.org/library/2016-08-18/understanding-assistive-technology-policy-and-implications-state-leaders

Understanding the Basics of Assistive Technology (infographic)
http://www.ctdinstitute.org/library/2016-08-19/understanding-basics-assistive-technology

Why You Need to Care About Accessibility (infographic)
http://www.ctdinstitute.org/library/2016-08-19/why-you-need-care-about-accessibility

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What is Accessibility? is Part I of the four-part *Digital Accessibility Toolkit: What Education Leaders Need to Know*. Be sure to view the other three parts of the toolkit and its supplementary infographics, using the links below. See the complete Toolkit here.

- **Part II: Procuring Accessible Technology**
- **Part III: Benefits of Digital Accessibility**
- **Part VI: Legal Requirements of Digital Accessibility**
- **Infographic: Getting Started with Accessibility**
- **Infographic: 5 Things to Know About Your Role in Ensuring Accessibility**

About CoSN

CoSN is the premier voice and resource for K-12 education technology leaders nationwide. Serving more than 11 million students in America's school systems, CoSN provides education leaders with the tools and relationships to leverage technology and advance modern, engaging learning environments. Visit cosn.org to find out more about CoSN's focus areas, annual conference and events, advocacy and policy, membership, and the CETL certification exam.

About CTD

The Center on Technology and Disability (CTD) is a user-centered learning and technical assistance website designed to increase the capacity of families, school systems, technical assistance providers, SEA and LEA leaders, and other key stakeholders to understand, assess, acquire, and implement appropriate assistive and instructional technology strategies and tools. CTD is administered by FHI 360, American Institutes for Research, PACER Center, and Adirondack Accessibility. Learn more: www.ctdinstitute.org.

About AIR

American Institutes for Research, in partnership with FHI360 on CTD, provides technical assistance to state and district leaders to support their efforts to integrate assistive and instructional technology strategies and tools. Established in 1946, with headquarters in Washington, D.C., the American Institutes for Research (AIR) is a nonpartisan, not-for-profit organization that conducts behavioral and social science research and delivers technical assistance both domestically and internationally in the areas of health, education, and workforce productivity. For more information, visit www.air.org.

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